Ontario

Ministry of Health and Long-Term Care
Public Health Division

Ontario Influenza Bulletin
2006-2007 Season

SURVEILLANCE Week 4 (January 21 – 27) 2007

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from January 21 – 27, 2007, (Week 4). The analysis for this issue occurred on Thursday February 1, 2007, therefore all data is current to that date unless otherwise specified.

Influenza activity in Ontario during Week 4, 2007, increased slightly in comparison to the previous week. Seventy-one sporadically occu ring cases of influenza A were reported through iPHIS from health units, while 7 new institutional outbreaks of influenza A were also reported. Toronto reported widespread influenza activity, while Central West, Central East and Southwest regions reported 'localized' influenza activity levels. The North East and Eastern regions reported 'sporadic' activity levels, and the North West region reported 'no activity' level.

For a definition of influenza-like illness (ILI) activity levels and links to websites providing current influenza information from other sources, please refer to the attached Appendix- I. If you would like to provide feedback on the Bulletin, please contact Christine D'Souza (christine.dsouza@moh.gov.on.ca, 416-212-5323) or Anne-Luise Winter (anne-luise.winter@moh.gov.on.ca, 416-327-7301).

Table 1: Summary of laboratory-confirmed influenza cases and institutional influenza outbreaks by health region, January 21 - 27 (Week 4), 2007.

Lab-confirmed Influenza cases*	HEALTH REGION							TOTAL
	North West	North East	Eastern	Central East	Toronto	South West	Central West	
Influenza A	1	5	6	11	23	7	18	71
Influenza B	0	0	0	0	0	0	0	0
Influenza A & B	0	0	0	0	0	0	0	0
Total new cases	1	5	6	11	23	7	18	71
Institutional influenza outbreaks‡	**0**	**0**	**3**	**1**	**1**	**2**	**0**	**7**

SOURCE: MOHLTC [iPHIS, Health Unit Reports to PHD]

* Includes reports of sporadically occurring influenza through iPHIS, as well as cases in institutional outbreaks, with dates of onset in the surveillance period.

‡ Laboratory confirmed outbreaks in institutions with onset date of symptoms during the surveillance period.

Table 2: Laboratory Confirmed cases of influenza by health unit & health region, with an episode date† between January 21 - 27 (Week 4), 2007.

Region	Health Unit	Laboratory Confirmed Influenza		
		Influenza A	Influenza B	TOTAL
North West	Northwestern	0	0	0
	Thunder Bay District	1	0	1
	TOTAL NORTH WEST	**1**	**0**	**1**
North East	Algoma	3	0	3
	North Bay Parry Sound District	1	0	1
	Porcupine	0	0	0
	Sudbury & District	1	0	1
	Timiskaming	0	0	0
	TOTAL NORTH EAST	**5**	**0**	**5**
Eastern	Eastern Ontario	0	0	0
	Hastings & Prince Edward Counties	0	0	0
	Kingston, Frontenac, Lennox & Addington	5	0	5
	Leeds, Grenville & Lanark	0	0	0
	Ottawa	1	0	1
	Renfrew	0	0	0
	TOTAL EASTERN	**6**	**0**	**6**
Central East	Durham Region	0	0	0
	Haliburton, Kawartha, Pine Ridge District	6	0	6
	Peterborough County-City	3	0	3
	Simcoe Muskoka District		0	0
	York Region	1	0	1
	Peel Region	1	0	1
	TOTAL CENTRAL EAST	**11**	**0**	**11**
Toronto	Toronto	23	0	23
	TOTAL TORONTO	**23**	**0**	**23**
South West	Grey-Bruce	3	0	3
	Elgin-St. Thomas	0	0	0
	Huron County	3	0	3
	Chatham-Kent	0	0	0
	Lambton	0	0	0
	Middlesex-London	1	0	1
	Oxford	0	0	0
	Perth District	0	0	0
	Windsor-Essex County	0	0	0
	TOTAL SOUTHWEST	**7**	**0**	**7**
Central West	Brant	0	0	0
	Haldimand-Norfolk		0	0
	Hamilton	10	0	10
	Niagara Region	0	0	0
	Halton Region	0	0	0
	Waterloo Region	6	0	6
	Wellington-Dufferin-Guelph	2	0	2
	TOTAL CENTRAL WEST	**18**	**0**	**18**
	TOTAL ONTARIO	**71**	**0**	**71**

SOURCE: MOHLTC [iPHIS, Health Unit Reports to PHD]

† Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)

Table 3: Cumulative* Laboratory confirmed cases of influenza by health unit & health region with an episode date† between September 1, 2006 – January 27, 2007

Region	Health Unit	Laboratory Confirmed Influenza		
		Influenza A	Influenza B	TOTAL
North West	Northwestern	0	0	0
	Thunder Bay District	3	0	3
	TOTAL NORTH WEST	**3**	**0**	**3**
North East	Algoma	4	0	4
	North Bay Parry Sound District	3	0	3
	Porcupine	0	0	0
	Sudbury & District	3	0	3
	Timiskaming	0	0	0
	TOTAL NORTH EAST	**10**	**0**	**10**
Eastern	Eastern Ontario	0	0	0
	Hastings & Prince Edward Counties	7	0	7
	Kingston, Frontenac, Lennox & Addington	9	0	9
	Leeds, Grenville & Lanark	2	0	2
	Ottawa	3	0	3
	Renfrew	2	0	2
	TOTAL EASTERN	**23**	**0**	**23**
Central East	Durham Region		0	0
	Haliburton, Kawartha, Pine Ridge District	29	1	30
	Peterborough County-City	12	0	12
	Simcoe Muskoka District	22	0	22
	York Region	28	0	28
	Peel Region	59	1	60
	TOTAL CENTRAL EAST	**150**	**2**	**152**
Toronto	Toronto	136		136
	TOTAL TORONTO	**136**		**136**
South West	Grey-Bruce	28	1	29
	Elgin-St. Thomas	0	0	0
	Huron County	20	0	20
	Chatham-Kent	1	0	1
	Lambton	1	0	1
	Middlesex-London	9	0	9
	Oxford	3	0	3
	Perth District	6	0	6
	Windsor-Essex County	1	0	1
	TOTAL SOUTHWEST	**69**	**1**	**70**
Central West	Brant	3	0	3
	Haldimand-Norfolk	3	0	3
	Hamilton	139	2	141
	Niagara Region	38	0	38
	Halton Region	58	0	58
	Waterloo Region	46	0	46
	Wellington-Dufferin-Guelph	63	0	63
	TOTAL CENTRAL WEST	**350**	**2**	**352**
	TOTAL ONTARIO	**741**	**5**	**746**

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

* Cumulative case counts include late reports and records that are otherwise reconciled. Therefore, cumulative counts may not equal new cases plus previous cumulative value.

† Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)

Influenza Subtype(s):
During week 4, 2889 isolates were received by the Public Health Agency of Canada, with a total of 227 testing positive for influenza A and 12 for influenza B. The majority of influenza A isolates (116) were from Ontario (51.1%), while 31 (13.7%) were from British Columbia, 27 (11.9%) from Alberta and 26 (11.5%) from Saskatchewan. Five influenza B isolates each were from Quebec (41.7%) and British Columbia (41.7%), while 2 (16.7%) were from Alberta.*

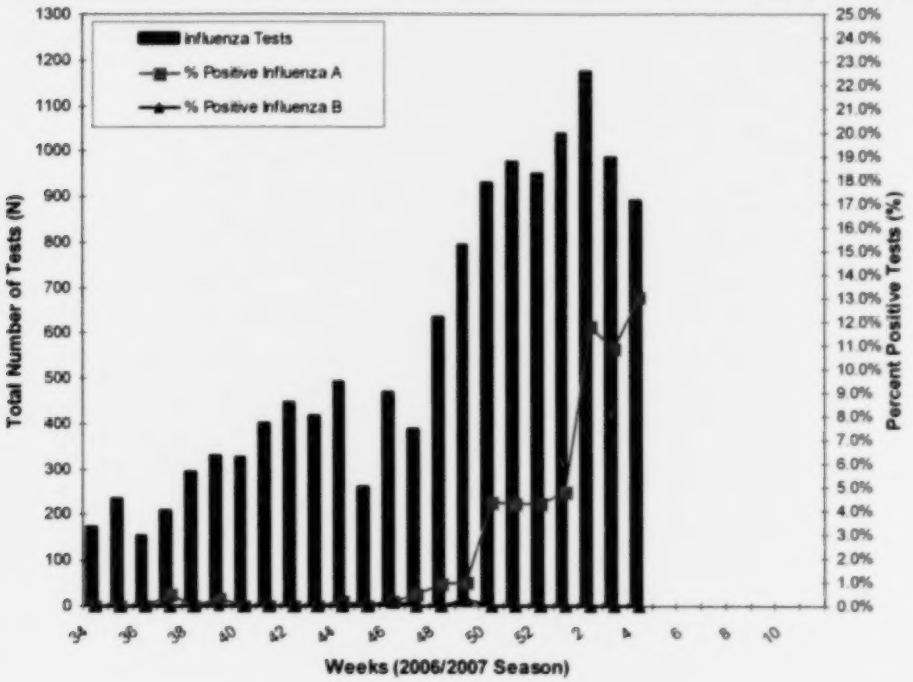
Antigenic Characterization:
The National Microbiology Laboratory (NML) has characterized 183 influenza viruses for the 2006-2007 influenza season: 92 were A/Wisconsin/67/05(H3N2)-like, 86 were A/New Caledonia/20/1999(H1N1)-like, 3 B/Malaysia/2506/2004-like, and 2 B/Shanghai/361/2002-like. All but the B/Shanghai/361/2002-like strain are included in the composition of the 2006-2007 Canadian influenza vaccine. Of the influenza A viruses characterized, 90% of the A(H1N1) viruses were from the West and 88% of the A(H3N2) viruses were from Ontario.**

Antiviral Resistance:
Since the start of the season, the NML has tested 130 influenza A isolates (59 H1N1, 71 H3N2) for amantadine resistance. None of the H1N1 isolates tested were resistant to amantadine; however, 14% (10/71) of the H3N2 isolates were resistant. Of the 150 isolates (147 influenza A, 3 influenza B) tested for oseltamivir resistance, none were found to be resistant.**

Note: Based on the World Health Organization recommendations, Canada's National Advisory Committee on Immunization (NACI) recommended the **2006-2007** influenza vaccine contain an **A/New Caledonia-like**, an **A/Wisconsin-like** & a **B/Malaysia-like** virus strain.

* These data have been obtained from the Respiratory Virus Detection tables of Public Health Agency of Canada for week 4, 2007.
** These data have been obtained from the FluWatch report of the Public Health Agency of Canada for week 3, 2007.

Figure 1: Total number of influenza tests performed and percent of positive tests in Ontario reported to the Centre for Infectious Disease Prevention and Control (CIDPC), by report week*.



Source: Public Health Agency of Canada
* Total numbers reported include late reports; therefore totals may not be equal to the sum of the weekly numbers.
Note: Cumulative numbers for season to date are available through FluWatch: http://www.phac-aspc.gc.ca/fluwatch/

Table 4: Institutional respiratory outbreaks in Ontario: New Outbreaks from January 21 - 27, 2007 (Week 4) and Total Outbreaks from September 1, 2006 – January 27, 2007

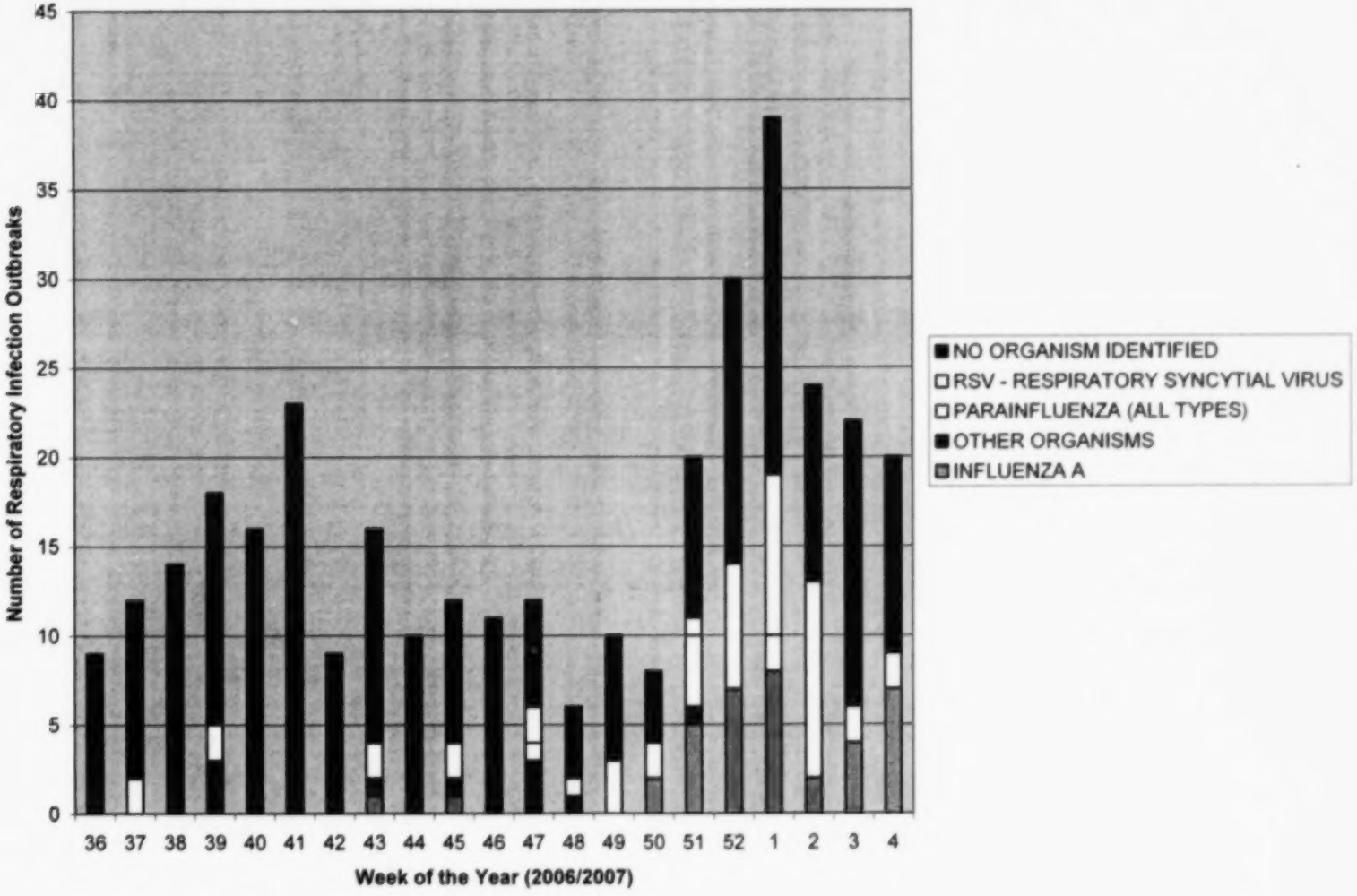
Institutional Respiratory Infection Outbreaks		
New Outbreaks* (January 21 - 27, 2007)	**N**	**% (of outbreaks)**
Influenza A	7	35.0
Influenza B	0	0.0
Influenza A and B	0	0.0
Parainfluenza (All types)	0	0.0
RSV	2	0.0
Other organisms	0	0.0
No organism identified	11	55.0
TOTAL	***20***	***100***
Total Respiratory Infection Outbreaks of the Season to date (Sep. 1, 2006 – Jan. 27, 2007)**	**N**	**% (of outbreaks)**
Influenza A	37	10.9
Influenza B	0	0.0
Enterovirus	9	2.6
Parainfluenza (All types)	15	4.4
RSV	40	11.7
Rhinovirus	12	3.5
No organism identified	228	66.9
TOTAL	***341***	***100***
Types of Institutions (All Outbreaks) **	**N**	**% (of outbreaks)**
Long-Term Care Homes	12	3.5
Hospitals	0	0.0
Retirement Homes	1	0.3
Other	0	0.0
Unknown	328	96.2
TOTAL	***341***	***100***
Outbreak Related Complications (All Outbreaks) **	**N**	**% (of total cases)**
Total Cases		
Residents	3973	70.2
Patients	438	7.7
Staff	1250	22.1
Total Cases	**5661**	**100**
Deaths		**% (of cases per role)**
Residents	66	1.7
Patients	5	1.1
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		**% (of cases per role)**
Residents	124	3.1
Patients	7	1.6
Staff	4	0.3
Hospitalizations		**% (of cases per role)**
Residents	124	3.1
Staff	1	0.1

SOURCE: MOHLTC: iPHIS Outbreak Summary

* New outbreaks are those in which the date of onset of illness in the first case occurred and recorded through iPHIS in the current surveillance period; i.e. January 21 - 27, 2007

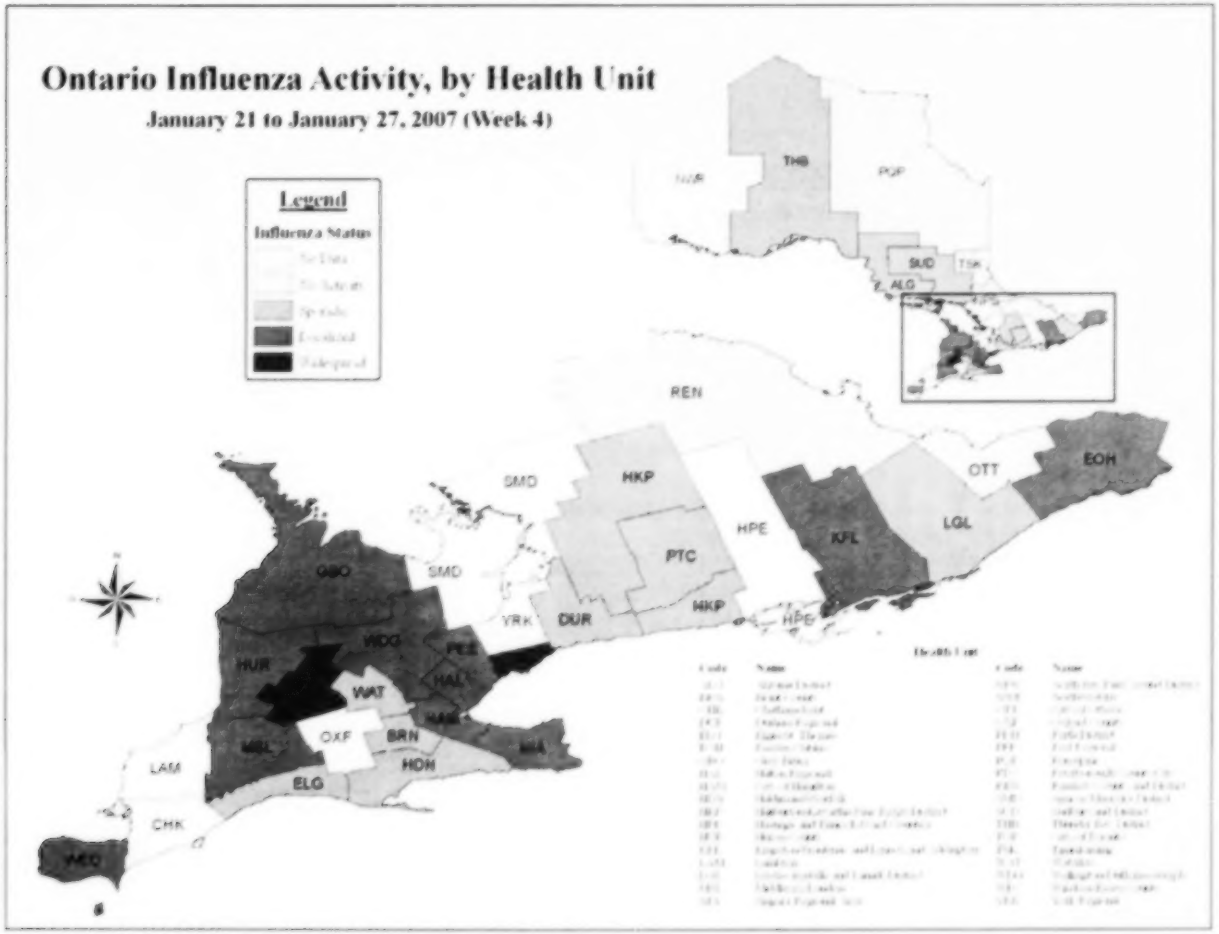
** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2006 – January 27, 2007

Figure 2: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total Outbreaks from September 1, 2006 – January 27, 2007* by causative organism



* Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2006 – January 27, 2007

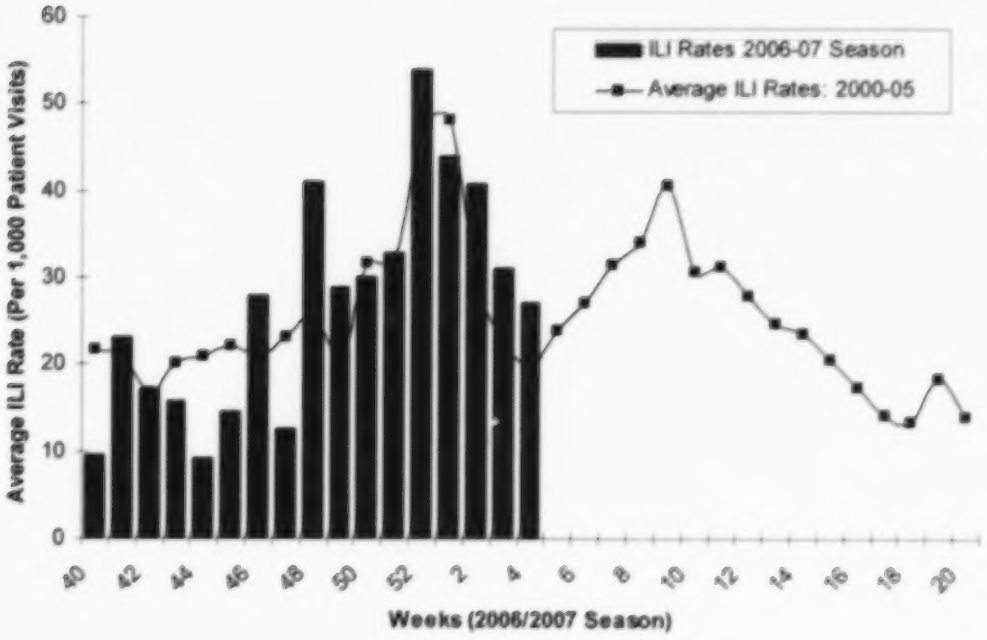
Figure 3: Influenza Activity* levels in Ontario by health unit & health region for Week 4, January 21 - 27, 2007.



SOURCE: MOHLTC [Provincial Influenza Activity Report (Appendix C) Database]

* Influenza activity levels are assigned by local public health units and reported to the MOHLTC by the Tuesday following the end of the surveillance week at 4 pm. Activity levels are assigned based on laboratory confirmations, ILI reports from various sources, and laboratory confirmed institutional outbreaks. Please refer to detailed definitions for the 2006-2007 season included in the Appendix-1]

Figure 4: Average influenza-like illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinel physicians* in Ontario in 2006- 2007 season, by report week, Compared to Ontario average† (1999/2000 to 2004/05 seasons).



Source: Public Health Agency of Canada

* Sentinel physician information is reported to Public Health Agency of Canada.

†No data available for mean rate in previous years for weeks 21 to 39 (1999-2000 through 2004-2005 seasons). During weeks 20-39, 2002-2003/2004-2005 seasons, ILI is reported once every two weeks, on even weeks only.

Table 5: Average influenza-like illness consultation rate (per 1,000 patient visits) by age group and postal code as reported by Sentinel Physicians* in Ontario, for Week 4 (January 21 - 27, 2007).

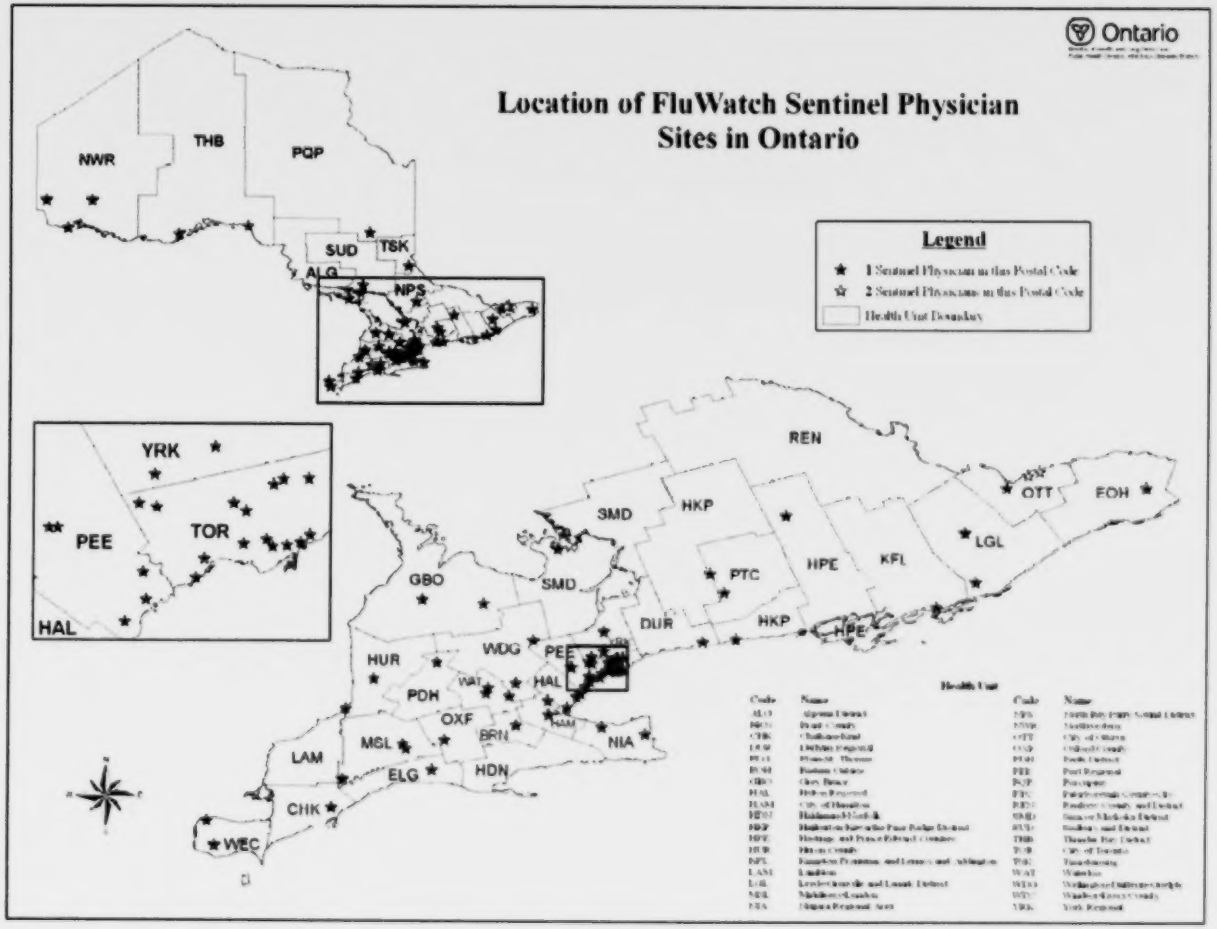
Postal Code	0 – 4	5 – 19	20 – 64	65 +	Unknown
K0C1A0	0	0	0	0	0
K1L8H2	0	0	0	0	0
K2L3C8	0	0	0	0	0
K2P1V3	0	0	0	0	0
K0H2N0	1	1	0	0	0
K7L1E9	0	0	0	0	0
K0L1C0	0	0	0	0	0
L1A3W4	0	0	0	0	0
K0L1H0	0	0	0	0	0
K0M1A0	0	0	0	0	0
L1B1H8	0	0	0	1	0
L4L4Y7	0	0	0	0	0
L4J7Y3	0	0	0	0	0
M5M1B2	0	0	0	0	0
M4X1W4	0	0	0	0	0
M6G4A1	0	0	1	0	0
M4E1V8	0	0	0	0	0
M8Y1W3	0	0	0	0	0
M2J2Z1	0	0	0	0	0
M3H1T1	1	0	0	0	0
M2K1E1	0	0	0	0	0
M9W6N5	0	0	0	0	0
M9W4L6	2	3	1	0	0
L5J2W4	0	0	2	0	0
L5G3H5	0	0	0	0	0
L4Y2N8	0	0	0	0	0
L6W2A4	1	0	1	0	0
L9W1G2	0	0	0	0	0
L6L2X4	0	0	0	0	0
L6L1X8	0	0	0	0	0
L9H1V1	0	0	0	0	0
L9H2G2	0	0	0	0	0
L0R1H0	0	0	0	0	0
N3C2E2	1	0	1	0	0
N2G1P2	0	0	0	0	0
N2M3B5	0	0	0	0	0
N4W1P9	0	0	0	0	0
N5H1K9	0	0	0	0	0
N0R1G0	0	0	0	0	0
N8X2G3	2	0	5	0	0
N0M1T0	0	0	1	0	0
N0L1Z0	0	0	4	1	0
N6C2R5	0	0	0	0	0
N0M1L0	1	3	1	0	0
N0G1L0	0	0	0	0	0
N0C1E0	0	0	0	0	0
P0A1C0	0	0	0	0	0
P0P1S0	1	0	1	0	0
P0M2L0	0	0	0	0	0
P4N1C6	0	0	0	0	0
P7E1H5	0	0	0	0	0
P0T2E0	0	0	0	0	0
ILI Sum	10	7	18	2	0
ILI Consultation Rate (per 1,000 patient visits)	106.38	51.47	23.65	5.31	0.00

Source: Public Health Agency of Canada

* Sentinel physician information is reported to the Public Health Agency of Canada

Note: The small numbers of sentinel physicians reporting at the local level make the ILI rates unstable. Please interpret these data correspondingly

Figure 5: Geographic Distribution of Sentinel Physicians in Ontario



Source: National Research System (NaReS), College of Family Physicians of Canada

* Sentinel physician information is reported to the Public Health Agency of Canada

FURTHER INFORMATION

1. Ontario Ministry of Health and Long-Term Care
   Previous issues of the *Ontario Influenza Bulletin* can be accessed at:
   http://www.health.gov.on.ca/english/providers/program/pubhealth/flu/flu_05/flubul_mn.html

2. Public Health Agency of Canada
   Issues of FluWatch can be accessed at:
   www.phac-aspc.gc.ca/fluwatch/

3. United States Centers for Disease Control and Prevention
   www.cdc.gov/flu/

INFORMATION ABOUT AVIAN INFLUENZA

For latest information on the status of avian influenza worldwide please use the following link:

Public Health Agency of Canada
http://www.phac-aspc.gc.ca/h5n1/index.html

APPENDIX - I

Definitions for influenza activity levels:

No Data: No activity report corresponding to the surveillance week was received at the Ministry of Health and Long-Term Care Call Centre by the Tuesday (at 4 p.m.) following the end of the surveillance period.

No Activity: No laboratory confirmed* influenza cases(s) or outbreak detected during the past four weeks within the influenza surveillance region, however, sporadically occurring **ILI** may be reported†

Sporadic: Sporadically occurring **ILI and laboratory confirmed influenza* case(s) with NO outbreaks** detected within the influenza surveillance region†

Localized: sporadically occurring **ILI and laboratory confirmed influenza* case(s) together with outbreaks of ILI** in schools and/or worksites or laboratory confirmed influenza in residential institutions occurring **in less than 50% of the influenza surveillance region(s)**†

Widespread: sporadically occurring **ILI and laboratory confirmed influenza* case(s) together with outbreaks of ILI** in schools and/or worksites or laboratory confirmed influenza in residential institutions occurring **in greater than or equal to 50% of the influenza surveillance region(s)**†

* Confirmation of influenza within the surveillance region at any time within the prior week
† Sub-regions within the province or territory as defined by the provincial/territorial epidemiologist

Influenza-Like Illness (ILI) Definitions:

A) ILI in the general population:

Acute onset of respiratory illness with fever and cough and with one or more of the following - sore throat, arthralgia, myalgia, or prostration which could be due to influenza virus. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

B) ILI/Influenza outbreaks:

Schools and work sites: greater than 10% absenteeism on any day, most likely due to ILI.

Residential institutions: two or more cases of ILI within a seven-day period, **including at least one laboratory confirmed case**.

Influenza Surveillance Weeks 2006-2007 and date of submission of Appendix C

WEEKS	START	END	Appendix C Submission to MOHLTC
5	28-Jan-07	3-Feb-07	6-Feb-07
6	4-Feb-07	10-Feb-07	13-Feb-07
7	11-Feb-07	17-Feb-07	20-Feb-07
8	18-Feb-07	24-Feb-07	27-Feb-07
9	25-Feb-07	3-Mar-07	6-Mar-07
10	4-Mar-07	10-Mar-07	13-Mar-07
11	11-Mar-07	17-Mar-07	20-Mar-07
12	18-Mar-07	24-Mar-07	27-Mar-07
13	25-Mar-07	31-Mar-07	3-Apr-07
14	1-Apr-07	7-Apr-07	10-Apr-07
15	8-Apr-07	14-Apr-07	17-Apr-07
16	15-Apr-07	21-Apr-07	24-Apr-07
17	22-Apr-07	28-Apr-07	1-May-07
18	29-Apr-07	5-May-07	8-May-07
19	6-May-07	12-May-07	15-May-07
20	13-May-07	19-May-07	22-May-07
21	20-May-07	26-May-07	29-Jun-07
22	27-May-07	2-Jun-07	5-Jun-07
23	3-Jun-07	9-Jun-07	12-Jun-07
24	10-Jun-07	16-Jun-07	19-Jun-07
25	17-Jun-07	23-Jun-07	26-Jun-07
26	24-Jun-07	30-Jun-07	3-Jul-07
27	1-Jul-07	7-Jul-07	10-Jul-07
28	8-Jul-07	14-Jul-07	17-Jul-07
29	15-Jul-07	21-Jul-07	24-Jul-07
30	22-Jul-07	28-Jul-07	31-Aug-07
31	29-Jul-07	4-Aug-07	7-Aug-07
32	5-Aug-07	11-Aug-07	14-Aug-07
33	12-Aug-07	18-Aug-07	21-Aug-07
34	19-Aug-07	25-Aug-07	28-Sep-07
35	26-Aug-07	1-Sep-07	4-Sep-07